



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/613,527	07/10/2000	Hiroaki Sudo	JEL 31211	9543
7590 09/14/2005				
Stevens Davis Miller & Mosher LLP				
Suite 850				
1615 L Street NW				
Washington, DC 20036				
			EXAMINER	
			SEFCHECK, GREGORY B	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/613,527

Applicant(s)

SUDO, HIROAKI

Examiner

Gregory B. Sefcheck

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

- Applicant's Amendment filed 6/28/2005 is acknowledged.
- Claims 15 and 17-21 have been amended.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 15 and 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sunaga (US006381233B1) in view of Amitay (USP 3,735,266).

- In regards to Claims 15 and 17-21,

Sunaga discloses a spread spectrum communication transmitter and receiver and CDMA mobile communication system and method (Title; Fig. 1 – base station; claims 15-21 – transmission, reception, communication, base station apparatus and methods).

Referring to Fig. 1, Sunaga discloses transmission by spreading a pilot (known) signal using a specific pilot spreading code at a predetermined spreading factor (Col. 1; lines 40-55; claim 15,18,19,20 – spreader that carries out spreading process on known signal at a predetermined spreading factor).

Sunaga discloses that the spread pilot is combined (multiplexed) with similarly spread traffic channels to be simultaneously transmitted over the same frequency band (Col. 1, lines 55-60; claim 15,18,19,20 – frequency division multiplexer that breaks down the spread known signal into a number of chips matching the spreading factor and assigning one chip per subcarrier, matching the spreading factor; claim 15,18,19,20 – transmitter to simultaneously transmit the chips after information from known signal is multiplexed into every chip assigned to the subcarriers).

Referring to Fig. 2, Sunaga discloses reception by despreading the received signal using the spreading code for the pilot signal to extract the pilot at despreader 8 (Col. 2, lines 8-10; claim 17,18,19,21 – demodulator that carries out despreading process on multiplexed signal using spreading code of known signal to extract the known signal).

Sunaga further discloses path detector 11 and handover controller 19 to detect multiple paths (phase error) from the pilot signal and received signal and supply a timing signal used for properly-phased despreading of the traffic channels at despreaders 9 and 10 (Col. 2, lines 13-18; claim 17,18,19,21 – phase error detector using known signal and received known signal; claim 17,18,19,21 – phase compensator for phase compensation on received version of each transmission signal).

It is inherent that CDMA spreading codes are used to spread signals at the spreading, or chip, rate. Subsequent multiplexing and demodulating of the various spread signals are inherently performed at the chip rate. Further, the inherent nature of CDMA is that the individually coded signals are spread out over the same frequency

Art Unit: 2662

band such that each signal (traffic and pilot) occupies the same frequency subcarriers.

The disclosure of Sunaga inherently meets these limitations of claims 15 and 17-21.

Sunaga does not explicitly disclose the assigning one known signal chip per subcarrier where the subcarriers are aligned in a frequency axis direction.

Amitay discloses utilizing a frequency diversity system to transmit a pilot signal within each channel (subcarrier).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Sunaga by utilizing a frequency diversity system to transmit a pilot signal within each channel of the system, as shown by Amitay, by transmitting one chip of the pilot signal within each subcarrier. This application of the teachings of Amitay in the CDMA system of Sunaga would provide greater system capacity while improving error recovery capabilities.

3. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sunaga in view of Amitay as applied to claim 15 above, and further in view of Ziv et al. (US005867527A), hereafter Ziv.

- In regards to Claim 16,

Sunaga discloses a spread spectrum communication transmitter that meets all limitations of the parent claims. Figs. 6A-6D show that the handover controller 19

Art Unit: 2662

determines its output based on the highest peak of the pilot signal received (Col. 2-3, lines 47-31).

However, Sunaga does not explicitly disclose the pilot signal having a higher signal level than other transmission signals

Ziv discloses a method of searching for a bursty signal in a spread spectrum communication system (Title; Abstract). Ziv discloses that a pilot channel is transmitted at a higher level than traffic-bearing signals (Col. 8, lines 25-28; claim 16 – known signal has a higher signal level than other transmission signals).

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method and system of Sunaga by transmitting the pilot signal at a higher level than traffic channels, as shown by Ziv, thus improving the signal-to-noise ratio of the pilot and improving the ability of the receiver to detect the pilot signal such that subsequent reception of the traffic channels can be done properly.

Response to Arguments

4. Applicant's arguments with respect to claims 15-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory B Sefcheck whose telephone number is 571-272-3098. The examiner can normally be reached on Monday-Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2662

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GBS
9-8-2005



JOHN PEZZLO
PRIMARY EXAMINER